CLAIMS:

What is claimed:



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1. An optical disk somprising;

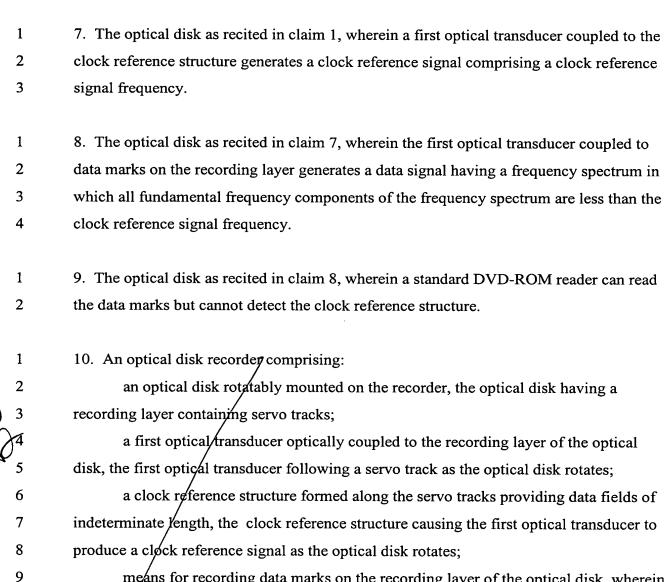
a recording layer having servo tracks; and

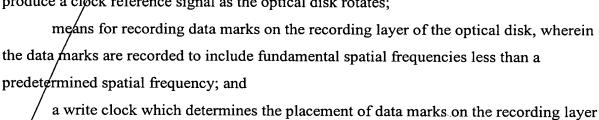
a clock reference structure formed along the servo tracks, the clock reference structure permitting data to be written to the recording layer in data fields of indeterminate length.

- The optical disk as recited in claim 1, wherein the clock reference structure comprises
 a reference spatial frequency which is greater than a predetermined spatial frequency.
- The optical disk as recited in claim 2, wherein the predetermined spatial frequency is
 the maximum spatial frequency detectable by a standard DVD-ROM reader.
- 4. The optical disk as recited in claim 2, wherein the clock reference structure comprises edges of grooves of the servo tracks which oscillate in-phase at an oscillation spatial frequency, the oscillation spatial frequency corresponding to the reference spatial frequency.
- 5. The optical disk as recited in claim 2, wherein the clock reference structure comprises edges of grooves of the servo tracks which oscillate substantially 180 degrees out-of-phase at an oscillation spatial frequency, the oscillation spatial frequency corresponding to the reference spatial frequency.
 - 6. The optical disk as recited in claim 2, wherein the clock reference structure comprises pits formed along the servo tracks, the reciprocal of a distance between centers of adjacent pits corresponding to the reference spatial frequency.

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11. The optical disk recorder as recited in claim 10, wherein the predetermined spatial frequency is the greatest spatial frequency detectable by a standard DVD-ROM reader.

of the optical disk, the write clock being phase locked to the clock reference signal.

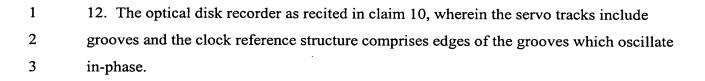


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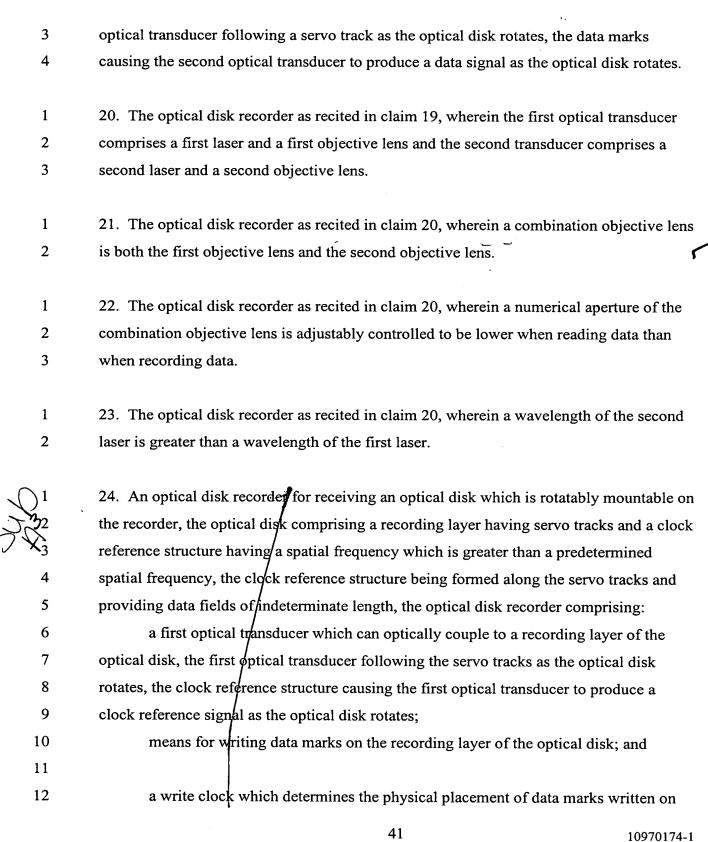
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- 13. The optical disk recorder as recited in claim 12, wherein data marks cause the first optical transducer to produce an unwanted data signal as the optical disk rotates, and the clock reference signal is separated from the unwanted data signal by detecting the clock reference signal using radial push-pull detection.
- 1 14. The optical disk recorder recited in claim 10, wherein the servo tracks include 2 grooves and the clock reference structure comprises edges on the grooves which oscillate 3 substantially 180 degrees out-of-phase.
- 1 15. The optical disk recorder recited in claim 14, wherein data marks cause the first
 2 optical transducer to produce an unwanted data signal as the optical disk rotates, and the
 3 clock reference signal is separated from the unwanted data signal by detecting the clock
 4 reference signal using split detection.
- 1 16. The optical disk recorder recited in claim 10, wherein the clock reference structure comprises pits formed along the servo tracks.
- 1 17. The optical disk recorder as recited in claim 10, wherein the data marks are positioned along the servo tracks according to a DVD-ROM standard.
- 1 18. The optical disk recorder as recited in claim 10, wherein the data marks are arbitrarily coded.
- 1 19. The optical disk recorder as recited in claim 10, further comprising a second optical transducer which is optically coupled to the data marks on the recording layer, the second

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the recording layer of the optical disk, the write clock being phase locked to the clock reference signal.

- 25. The optical disk recorder as recited in claim 24, wherein the predetermined spatial frequency is the maximum spatial frequency detectable by a standard DVD-ROM reader.
- 26. The optical disk recorder as recited in claim 24, wherein the first optical transducer can detect higher spatial frequencies than an optical transducer of a standard DVD-ROM optical disk reader.
- 27. The optical disk recorder as recited in claim 24, further comprising a second optical transducer which can optically couple to the data marks on the recording layer, the second optical transducer following a servo track as the optical disk rotates, the data marks causing the second optical transducer to produce a data signal as the optical disk rotates.
 - 28. The optical disk recorder as recited in claim 24, wherein the first optical transducer comprises a first laser and a first objective lens and the second transducer comprises a second laser and a second objective lens.
- 29. The optical disk recorder as recited in claim 28, wherein a combination objective lens is both the first objective lens and the second objective lens.
- 30. The optical disk recorder as recited in claim 29, wherein a numerical aperture of the combination objective lens is adjustably controlled to be lower when reading data than when recording data.
- 31. The optical disk recorder as recited in claim 29, wherein a wavelength of the second laser is greater than a wavelength of the first laser.

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